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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/380,270	08/27/1999	ANDERS THUREN	104-248P	2398
30593	7590	05/03/2004		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			EXAMINER POKRZYWA, JOSEPH R	
			ART UNIT 2622	PAPER NUMBER 16
DATE MAILED: 05/03/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/380,270

Applicant(s)

THUREN, ANDERS

Examiner

Joseph R. Pokrzywa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment was received on 2/9/04, and has been entered and made of record. Currently, **claims 1-14** are pending.

Response to Arguments

2. Applicant's arguments filed 12/23/03 have been fully considered but they are not persuasive.

3. In response to applicant's arguments regarding the rejection of independent **claims 1 and 14**, as cited in the Office action dated 9/23/03 under 35 U.S.C. 102(b) as being anticipated by Teitzel *et al.* (U.S. Patent Number 5,533,170), whereby applicant argues on pages 8 and 9 that Teitzel does not provide an adequate solution for the problems of forwarding the large amount of data needed for controlling and modulating the beams and the provision of an efficient way to achieve the necessary data processing, since Teitzel's solution is complex, costly and/or inflexible. This may be so, but the current claim language does not convey these differences. The fact that Teitzel's solution is different than the current invention is not part of the current claim language, and as claims 1 and 14 are currently worded, Teitzel can still be interpreted as teaching each of the limitations.

Further, applicant argues on pages 9 and 10 that Teitzel fails to teach of a first conversion in which the input data is fractured into writing fields and a second conversion in which the geometries are cut into scan lines. Teitzel discloses a first conversion step fracturing the input

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data into writing fields, as read in column 7, line 36 through column 8, line 44, wherein “the host computer transforms and fractures the geometry data and placement instructions received from the external computer system into sub-frames” and “[b]y utilizing the above geometry object forms, a complete sub-frame can be described in a minimum amount of space”. This shows that data is fractured into generated geometry data, being sub-frames having appended header information that describes the group, thus being considered as “writing fields”. Continuing, Teitzel teaches of a second conversion step of cutting the geometries in the fractured database into scan lines, as read in column 8, line 45 through column 9, line 53, wherein “each geometry engine rasterizes a different sub-frame, thus the sub-frames, which include the geometries fractured in the first conversion step, are rasterized (or cut) into scan lines. While the structure and method of the system taught by Teitzel are explained to be different than the current invention in applicant’s arguments, the claims, as currently worded, can still be interpreted as being anticipated by Teitzel.

4. Therefore, the rejection of *claim 1*, as well as *claim 14*, as cited in the Office action dated 9/23/03, under 35 U.S.C. 102(b) as being anticipated by Teitzel *et al.*, are maintained and repeated in this Office action.

Drawings

5. The drawings were received on 2/9/04. These drawings are acceptable by the examiner.

Specification

6. The amendment dated 12/23/03, which was not entered, included changes to the specification, being in reply to the objection raised in the Office action dated 9/23/03. However, because the amendment was not entered, these changes were also not entered. Therefore, the objection remains, and is repeated in this Office action.

7. The disclosure is objected to because of the following informalities:

On page 4, line 26, "tree" should read "three".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. **Claims 1-14** are rejected under 35 U.S.C. 102(b) as being anticipated by Teitzel *et al.* (U.S. Patent Number 5,533,170, cited in the Office action dated 9/23/03).

Regarding **claim 1**, Teitzel discloses a method for fast and accurate writing of very complex patterns on a light sensitive surface (see abstract, and column 3, line 44 through column 4, line 31) comprising the steps of providing at least two modulated focused laser beams scanning the surface in interlaced parallel scan lines (column 3, line 44 through column 4, line 31), providing for each beam a beam processor unit with data conversion logic and means for modulating the laser beam (column 7, lines 3 through 32, and column 11, lines 30 through 41), providing input data containing the geometries to be written on the plate in an input format (column 7, line 36 through column 8, line 23), in a first conversion step fracturing the input data

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into writing fields (column 7, lines 36 through 62), in a second conversion step cutting the geometries in the fractured database into scan lines (column 8, line 54 through column 9, line 53), and generating for each scan line a scan list containing geometries to be written in the scan line, so called segments (column 9, line 19 through column 10, line 12), and performing the second conversion step in at least two parallel processors, so called segmentizers (column 9, line 19 through column 11, line 28), operating simultaneously but on different writing fields (column 11, line 30 through column 12, line 10), further distributing the scan lists to the beam processor units in accordance with the interlacing of the scan lines (column 10, line 63 through column 11, line 28), and in a third conversion step converting in the beam processor units the scan lists of segments to analog power modulation sequences for the laser beams (column 12, lines 11 through 39).

Regarding **claim 2**, Teitzel discloses the method discussed above in claim 1, and further teaches that the segments in the scan lists are simplified geometrical representations of those parts of the input geometries that fall in the scan line (column 7, line 46 through column 8, line 37).

Regarding **claim 3**, Teitzel discloses the method discussed above in claim 1, and further teaches that the segments in a scan lists are non-overlapping (column 8, lines 24 through 52).

Regarding **claim 4**, Teitzel discloses the method discussed above in claim 1, and further teaches that in the segments in a scan lists are rectangles with a length and a width (column 8, lines 1 through 37).

Regarding *claim 5*, Teitzel discloses the method discussed above in claim 1, and further teaches that the segments in the scan lists are sorted in the order they will be written by the scanning beam (column 8, lines 1 through 52).

Regarding *claim 6*, Teitzel discloses the method discussed above in claim 1, and further teaches that in the conversion in the beam processor units uses a set of conversion rules that are empirically calibrated (column 1, lines 33 through 50, and column 5, line 58 through column 6, line 20).

Regarding *claim 7*, Teitzel discloses the method discussed above in claim 1, and further teaches that in the conversion in the beam processor units uses at least one table-lookup function (column 12, line 5 through column 13, line 25).

Regarding *claim 8*, Teitzel discloses the method discussed above in claim 1, and further teaches that in the scan lists are distributed to the beam processor units via a cross-switch network (see Fig. 5, 8, and 9, column 7, lines 3 through 25, column 11, lines 42 through 65, and column 14, line 15 through column 15, line 16).

Regarding *claim 9*, Teitzel discloses the method discussed above in claim 1, and further teaches that in the scan lists are distributed to the beam processor units via a bus-system (see Figs. 5, 6, and 9, column 13, line 27 through column 15, line 16).

Regarding *claim 10*, Teitzel discloses the method discussed above in claim 1, and further teaches that in the scan lists are distributed to the any one of the preceding claims beam processor units by a multiplexer (MUX 806, 808, 809, seen in Fig. 8, column 12, lines 21 through 30).

Regarding *claim 11*, Teitzel discloses the method discussed above in claim 1, and further teaches that in the data are pipelined through the second and third conversion steps without intermediate non-volatile storage (column 11, line 54 through column 12, line 20).

Regarding *claim 12*, Teitzel discloses the method discussed above in claim 1, and further teaches that in beam boards has an input buffer with room for the scan lists for at least two writing fields (column 11, lines 54 through 65).

Regarding *claim 13*, Teitzel discloses the method discussed above in claim 1, and further teaches that the transfer between the segmentizers and the beam processor unit are double buffered, in one output buffer in the segmentizer and in one input buffer in the beam processor unit (column 12, lines 5 through 30).

Regarding *claim 14*, Teitzel discloses an apparatus for fast and accurate writing of very complex patterns on a light sensitive surface comprising at least two modulated focused laser beams scanning the surface in interlaced parallel scan lines (see abstract, and column 3, line 44 through column 4, line 31), for each laser beam a beam processor unit with data conversion logic and means for modulating the laser beam (column 7, lines 3 through 32, and column 11, lines 30 through 41), means for accepting input data containing the geometries to be written on the plate in an input format (column 7, line 36 through column 8, line 23), data processing means for in a first conversion step fracturing the input data into writing fields (column 7, lines 36 through 62), parallel data processing means for in a second conversion step cutting the geometries in the fractured database into scan lines (column 8, line 54 through column 9, line 53), and generating for each scan line a scan list containing geometries to be written in the scan line, so called segments (column 9, line 19 through column 10, line 12), data distribution means for distributing

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the scan lists to the beam processor units in accordance with the interlacing of the scan lines (column 10, line 63 through column 11, line 28), and data conversion and beam modulation means in the beam processors units for in a third conversion step, converting the scan lists of segments to analog power modulation sequences for the laser beams (column 12, lines 11 through 39).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

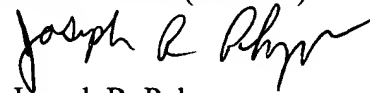
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joe Pokrzywa whose telephone number is (703) 305-0146. The examiner can normally be reached on Monday-Friday, 7:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph R. Pokrzywa
Examiner
Art Unit 2622

jrp



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